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THE FOREST PROBLEM

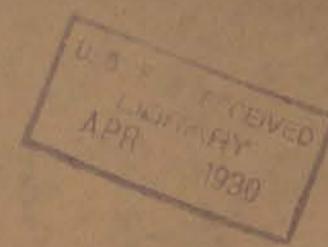
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by

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FOREST SERVICE

U. S. DEPARTMENT OF AGRICULTURE

1929

UNITED STATES
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I. THE PROBLEM

The forest problem is a land problem, a raw material problem, an industrial problem, and a social problem of the first magnitude. In essence, it consists of finding ways to keep one-fourth of our land area productive, to supply about 25 billion cubic feet of wood a year, to perpetuate industries that employ over a million men and turn out products valued at more than two billion dollars a year, to obtain the full benefit of forests in conserving soils and waters, and to preserve the important social values of forests.

Much progress has been made toward improving the forest situation, especially through the leadership of the Federal and State governments and of progressive industrial leaders and forest owners. In spite of many noteworthy achievements by these and other agencies, however, the bulk of our forests are still subject to methods of exploitation that are detrimental to the public interest in the perpetuation of a basic natural resource.

Over vast areas of forest, a combination of destructive cutting and fire makes natural regrowth of the forest difficult or impossible by wiping out young growth and seed trees. In place of these methods, which are inevitably accompanied by waste and severe forest deterioration, it is essential, in the public interest, to develop better forest practices and protection, harvesting the ripe timber but safeguarding the forest as a living productive organism.

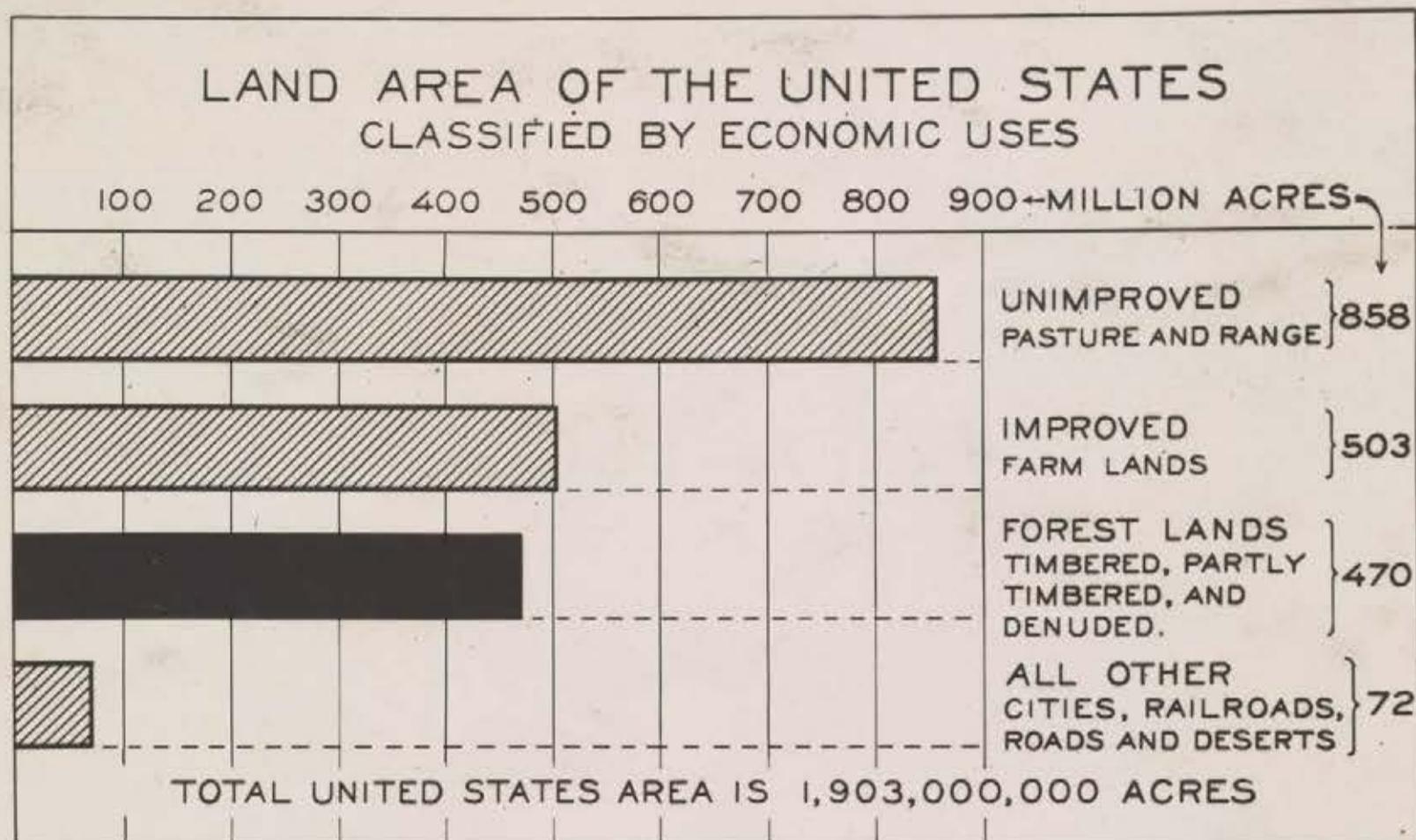
The immediate need is to check forest fires and to work out more satisfactory methods of exploitation, without waiting for a complete solution of the complex problems of ultimate ownership and intensive management. Unless far-reaching measures are rapidly put into effect, the concentration of fires and destructive practices coupled with more intensive cutting, particularly in second growth forests, will still further reduce the productivity of our forest lands.

The ordinary laws of supply and demand do not afford a solution of the problem, and consequently public leadership on a larger and more effective scale is essential.

NOTE - Some of the figures used in the charts are based on a careful analysis and compilation of all available data on forest resources made by the Forest Service in 1920. The mere revision of such estimates without more accurate basic data would not give substantially better results than those now available. The McSweeney-McNary forest research act of 1928 authorizes a \$3,000,000 appropriation for a Nation-wide forest survey, which is now being initiated by the Forest Service, and which will give adequate basic data on forest resources and conditions.

Valuable assistance in preparing the diagrams was given by R.V. Reynolds and J.M. Witherow of the Forest Service.

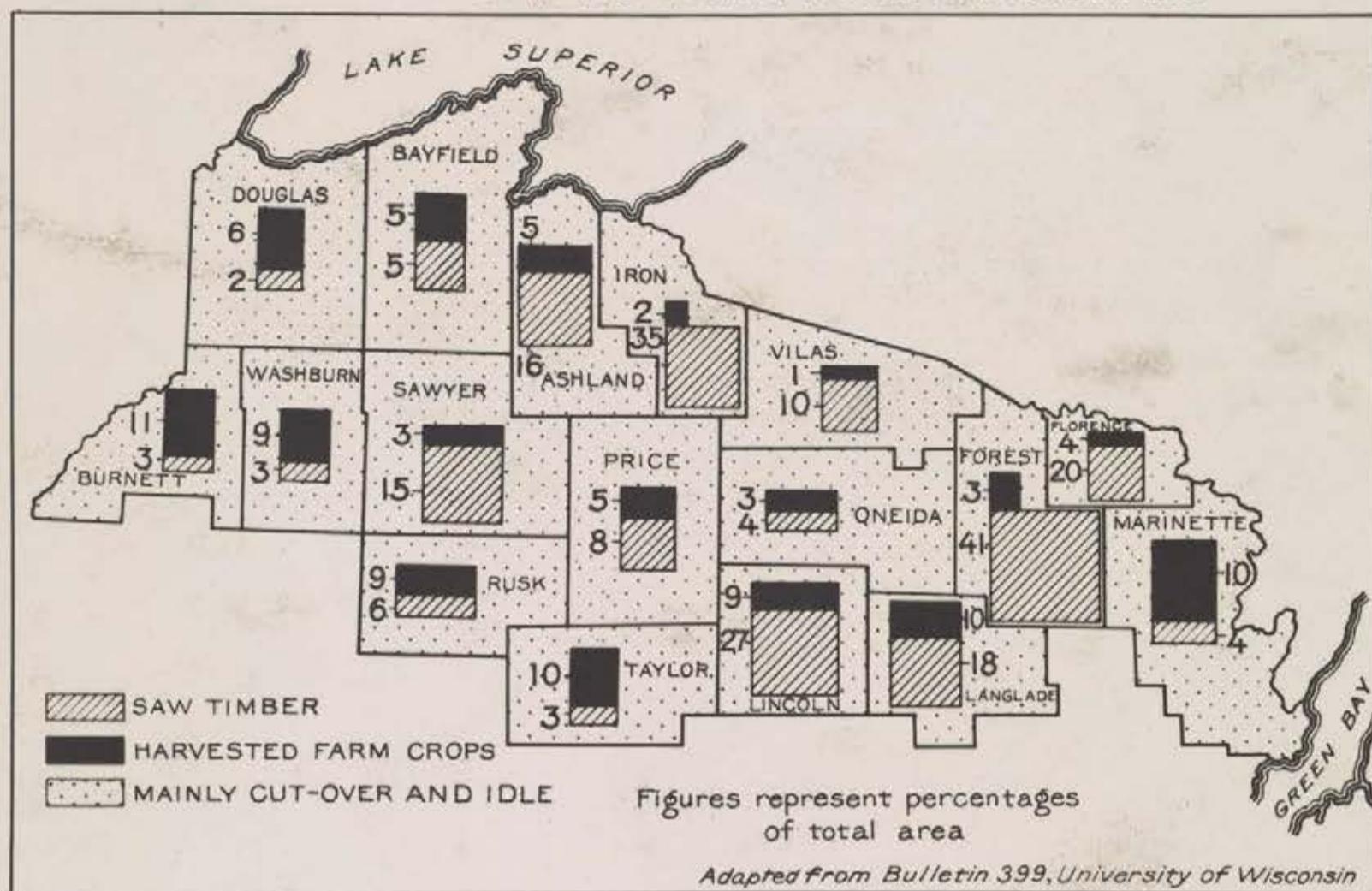
II. IMPORTANCE OF FORESTS



One-fourth the land area of the United States is best adapted to timber-growing and unless used for that purpose will be largely idle. Not only cut-over forest land but much marginal farm land should be devoted to intensive forest production. Forestry will be more than a means of supplying timber; it will productively employ immense quantities of land, labor, and capital and thus make low-grade land contribute permanently to rural and national prosperity.

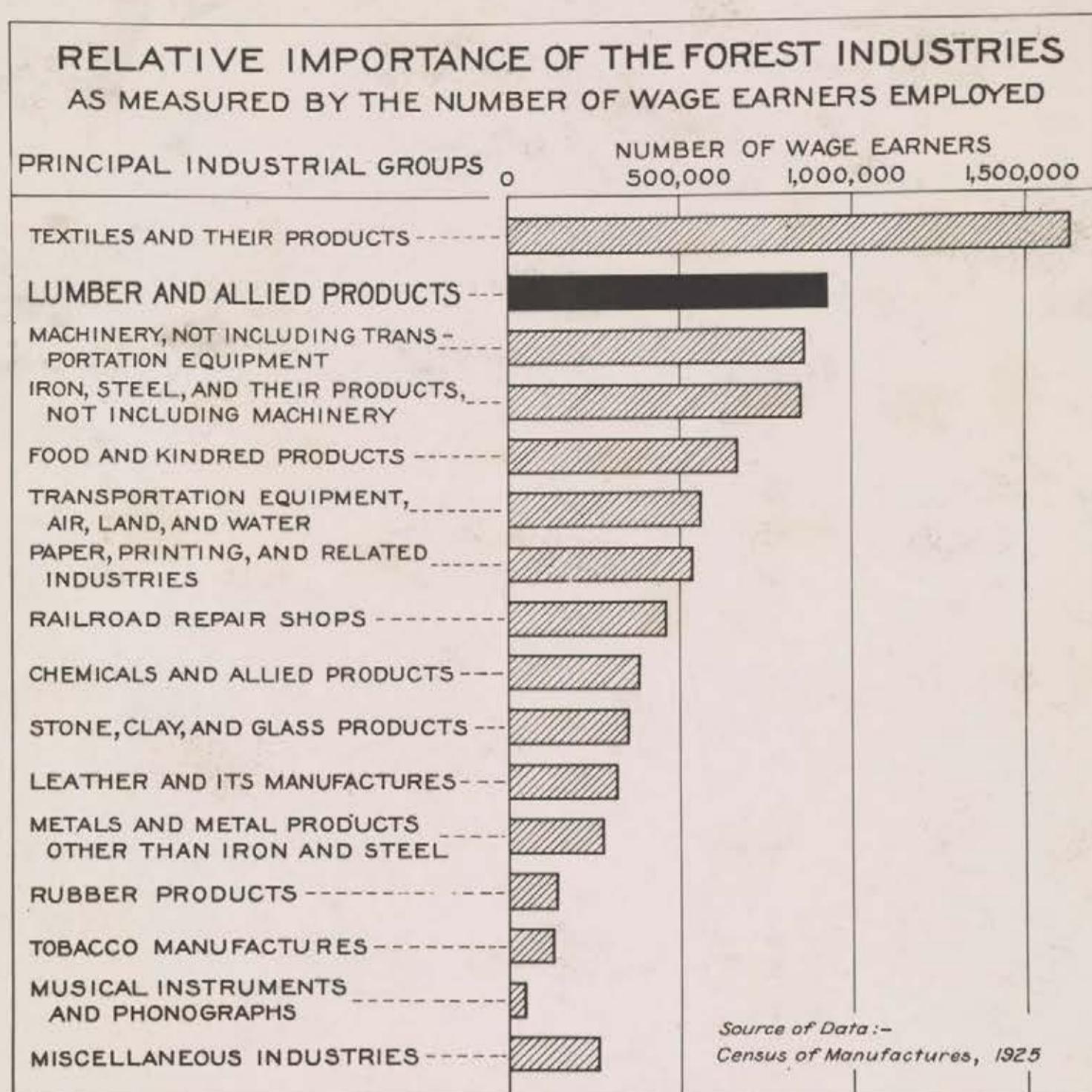
AGRICULTURAL IMPORTANCE

CUT-OVER LAND IN NORTHERN WISCONSIN COUNTIES



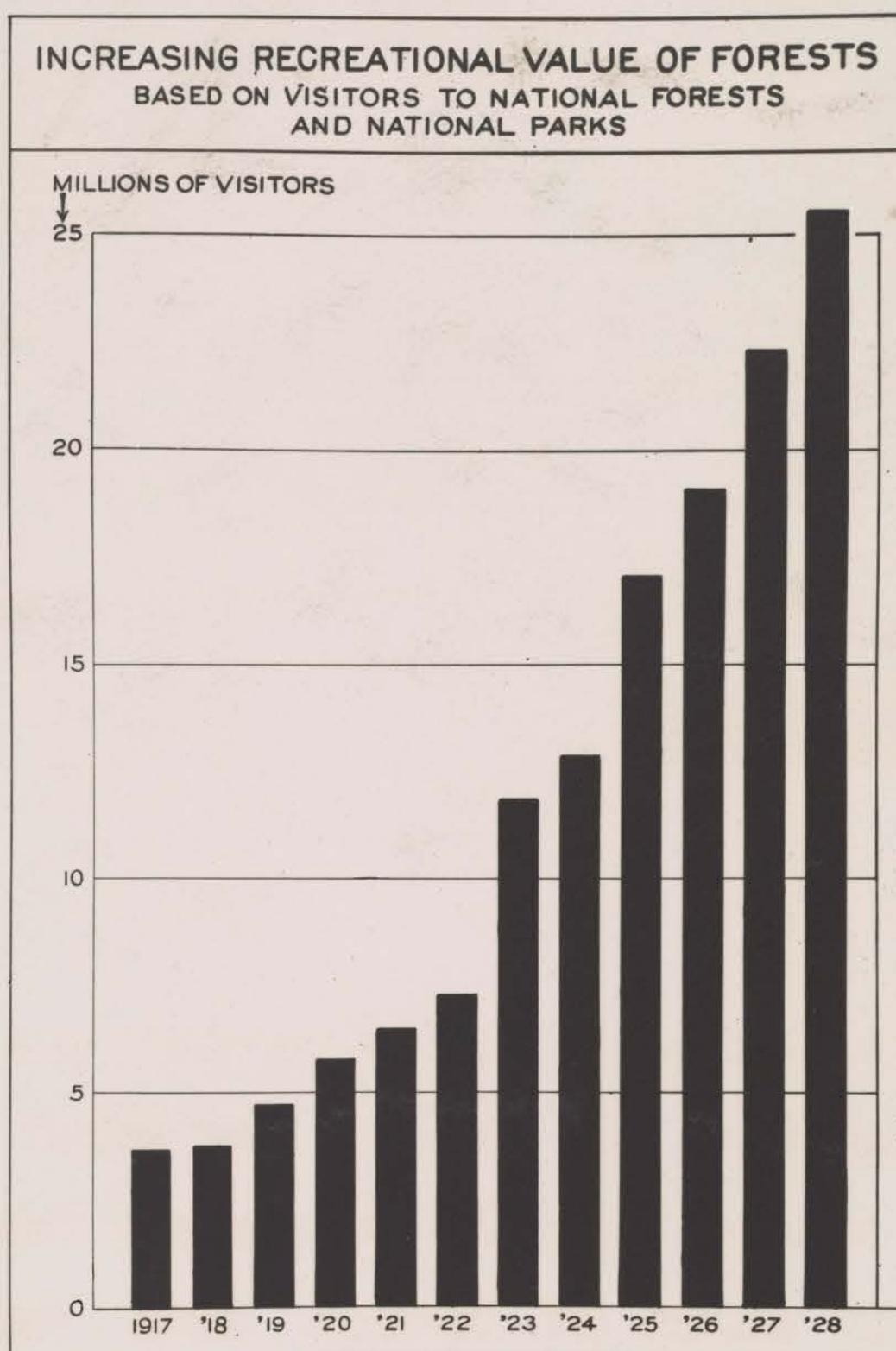
Except in the central farming region, the proportion of farm to forest land is small. Northern Wisconsin is an example. From 56 to 93 per cent of the area of the northern counties is cut-over lands, largely unsuited to agriculture, neglected and unproductive. They contribute little either of employment, of salable products, or of taxes. If these lands were devoted to intensive timber growing, the economic tone of the region would be substantially improved.

INDUSTRIAL IMPORTANCE



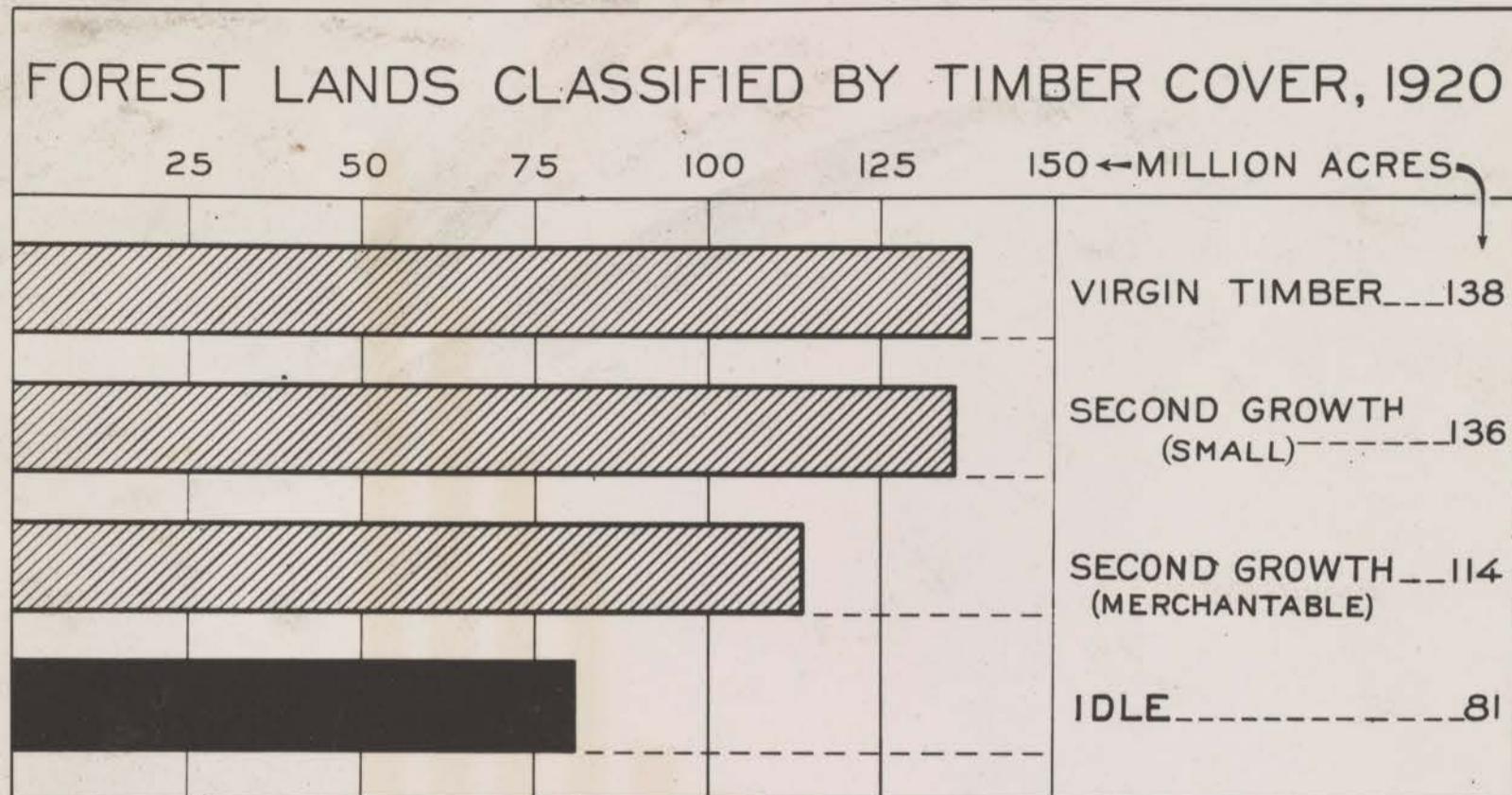
Number of wage earners is one of the best indexes of industrial importance, and on this basis the lumber and allied industries (even excluding the pulp and paper industry) form one of the most important groups. The perpetuation of this vast industrial structure depends on maintaining the productivity of our forest lands.

SOCIAL IMPORTANCE



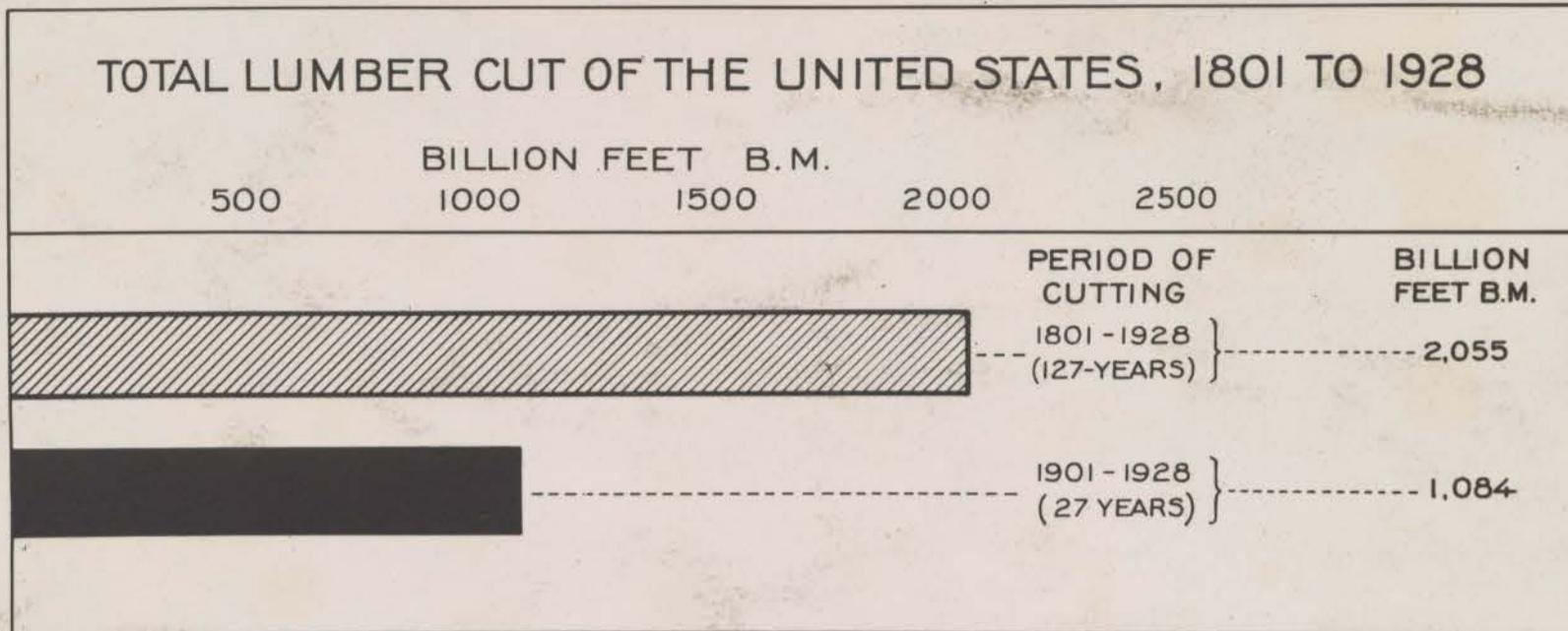
In addition to their direct products, forests have immense social value for public health and recreation. They also have large but unmeasurable value in regulating streamflow and preventing erosion. Degraded or denuded forests do not fulfill either of these functions.

III. FOREST DEPLETION



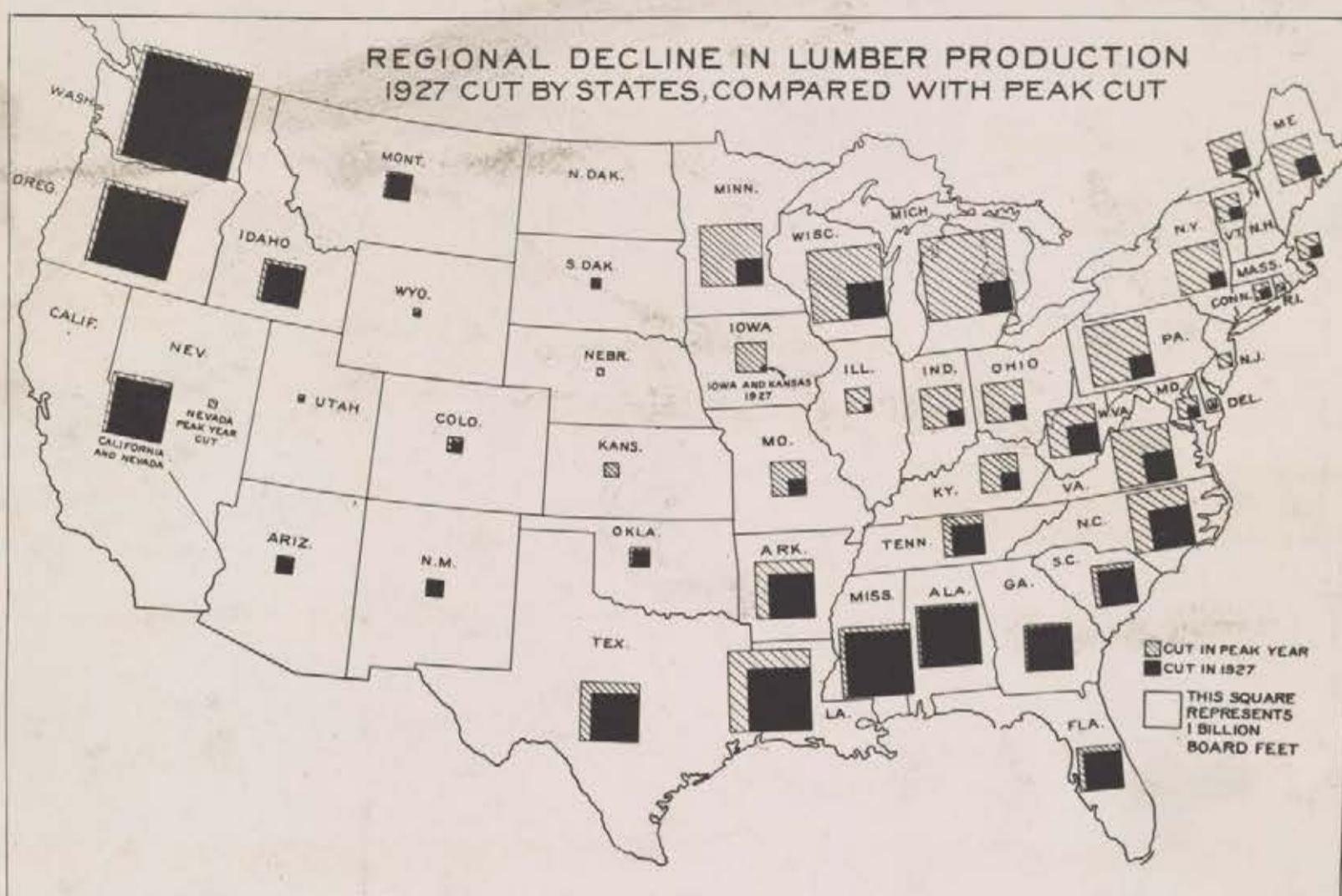
Forest depletion on a large scale has proceeded for 70 years. The most recent general study (1920) indicated that some 80 million acres of forest land had been rendered practically unproductive and that a large but unknown proportion of the second-growth forest was in poor condition.

INEXHAUSTIBILITY A FALLACY



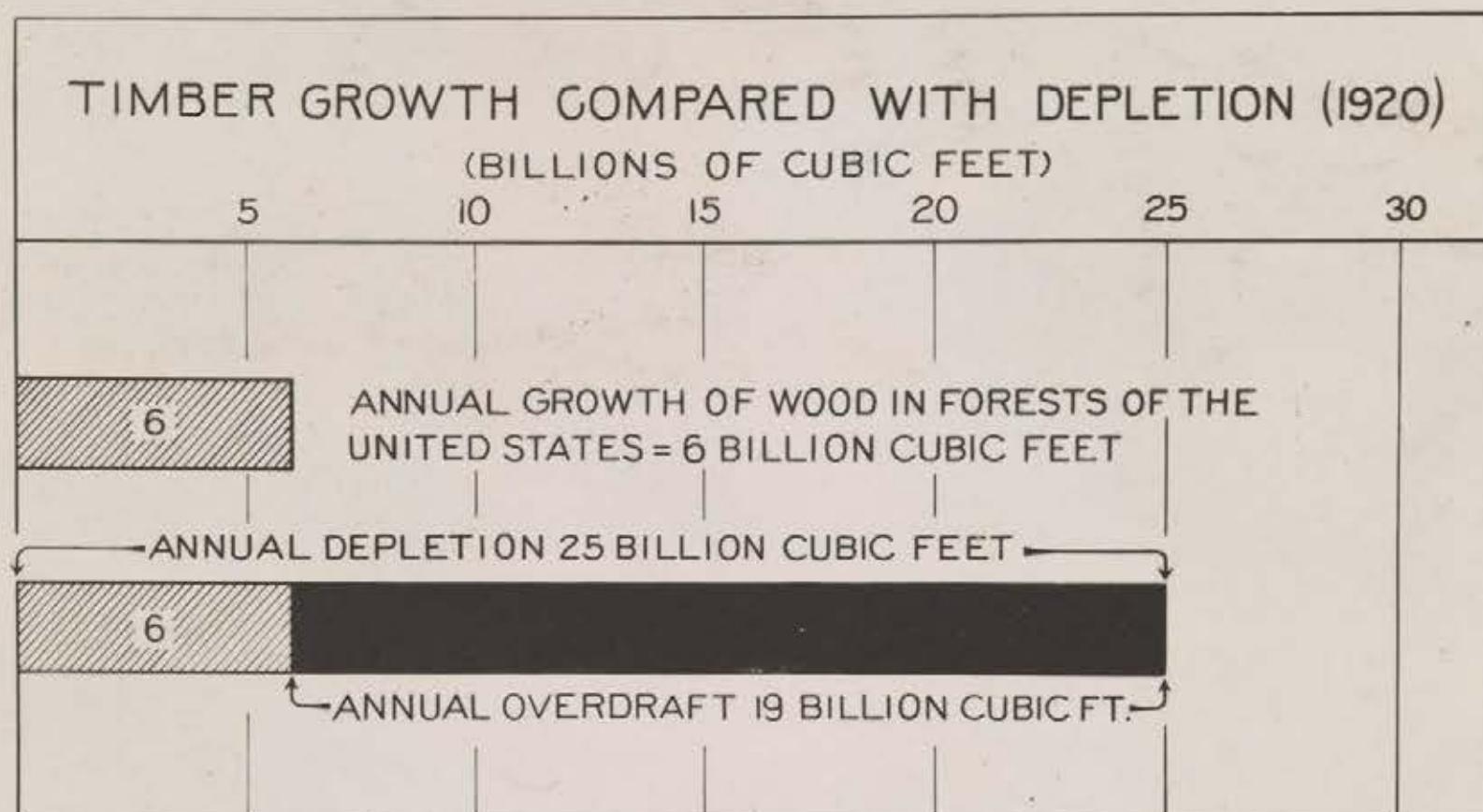
"Inexhaustibility" of the timber supply is a dangerous fallacy. Of the total lumber cut during the 127 years since 1801, over half has been cut since 1901. A significant fact of the forest situation is the intensity of the attack on our remaining forests without compensating safeguards that permit adequate forest renewal. It is extremely doubtful if substitutes will substantially reduce timber demands, provided supply is kept up by re-growth.

MARCH OF DEPLETION



Forest depletion without adequate replacement in the northeastern fourth of the United States has extinguished important forest industries, depopulated extensive forest regions, burdened states and counties with large areas of low-grade unproductive land, and exacted from our greatest agricultural and industrial region an immense freight bill on lumber imported from the Far South and West. The same cycle is being repeated in the South and the West. Yet each of these regions can grow larger crops of timber than they have produced from wild forests.

ANNUAL OVERDRAFT



The nation is drawing its wood supply largely from capital account, for the annual growth is only about one-fourth the annual depletion and the yearly overdraft is 19 billion cubic feet, according to the 1920 estimate. The answer is not to hoard our remaining supplies but to take energetic steps to grow abundant new supplies.

IV. PROGRESS TOWARD SOLUTION OF FOREST PROBLEM

Efforts to meet the forest problem have proceeded along five principal lines:

Promotion of private timber-growing

Fire protection

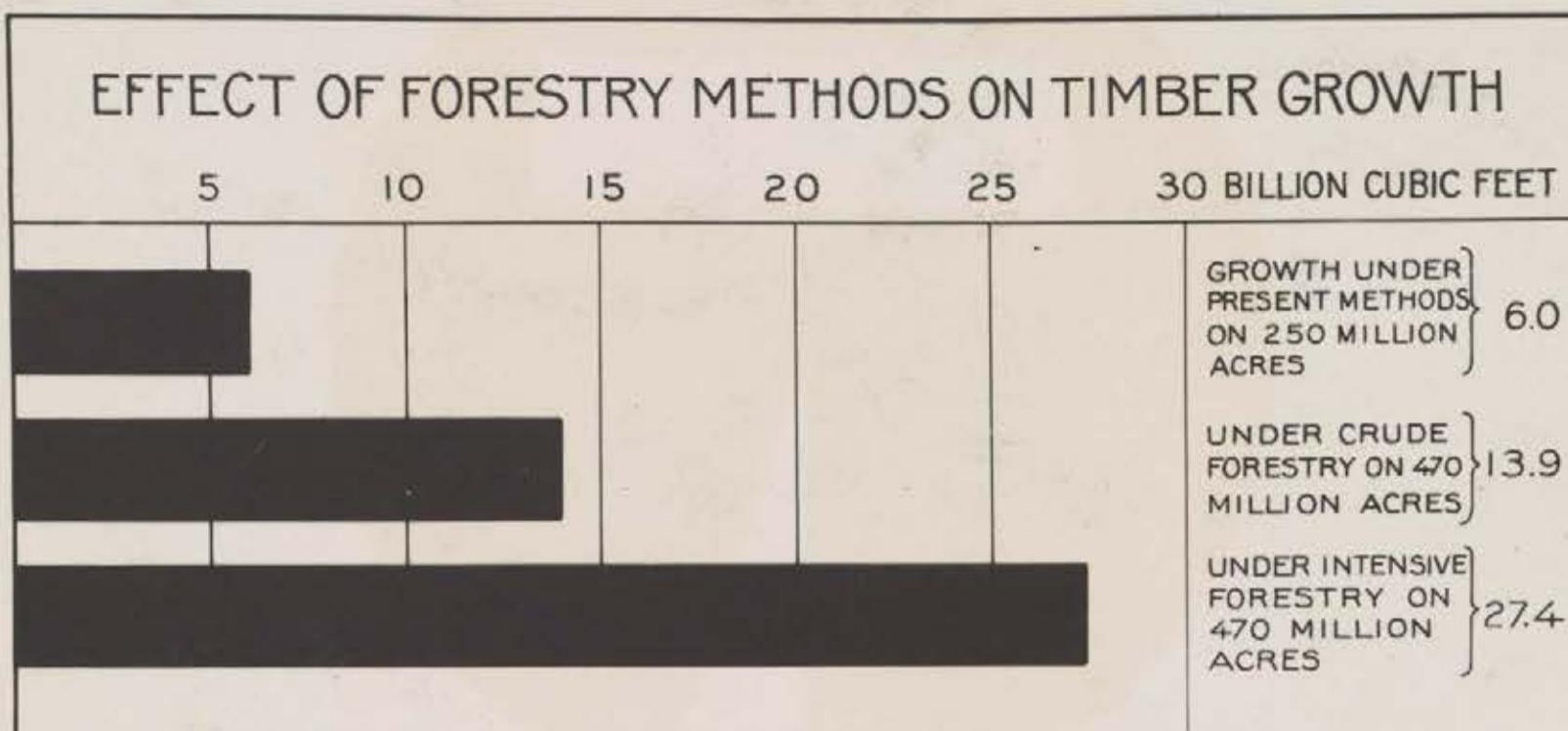
Public ownership

Forest planting

Forest research and education

Significant achievements have been made in each of these fields; nevertheless, as the following discussion shows, much remains to be done.

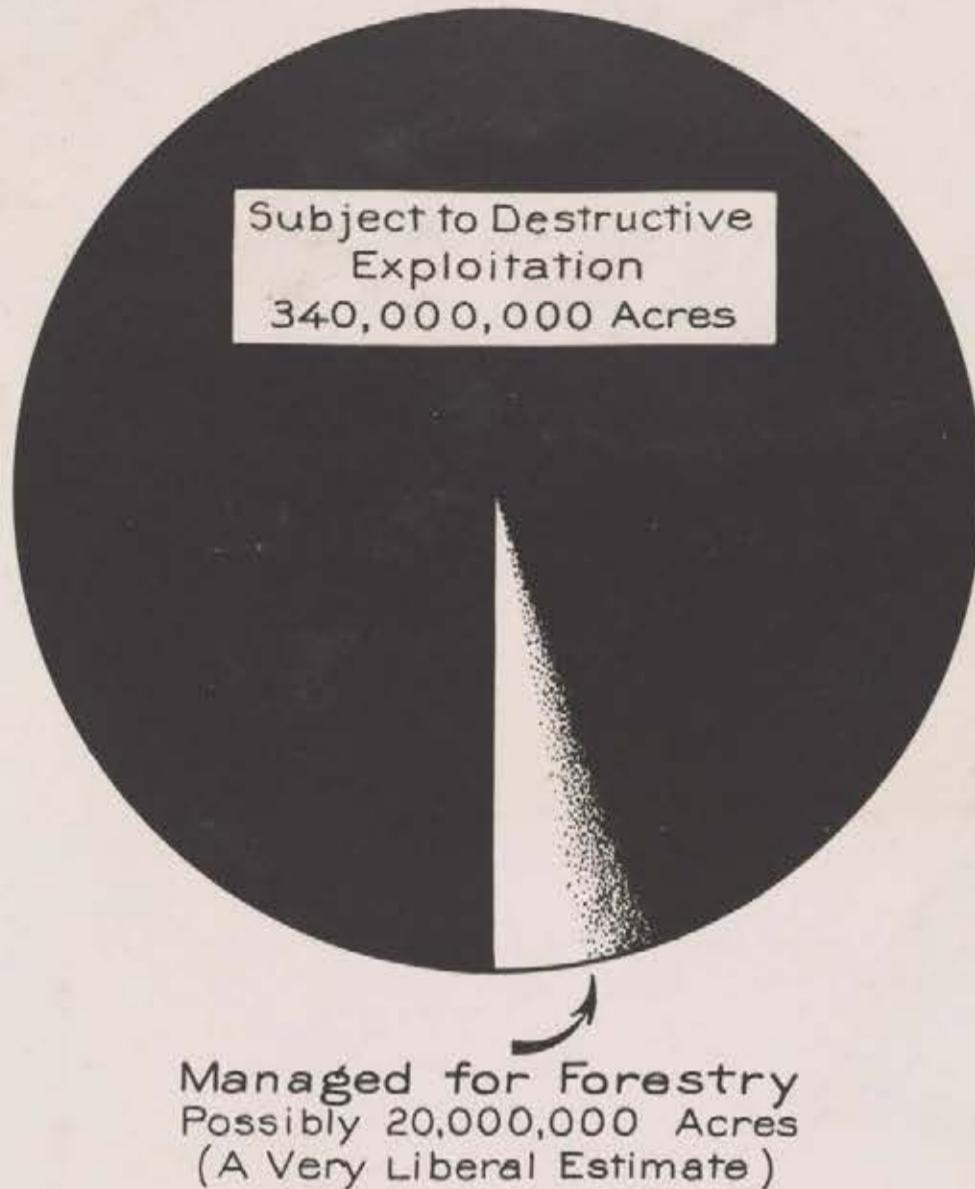
PROGRESS IN FORESTRY METHODS



There is only one solution of the forest problem: to substitute intensive timber-growing (silviculture) for "timber-mining". Timber importation from the world's dwindling forests cannot provide adequate supplies and would leave untouched the problem of making idle lands productive. Intensive forest management on 470 million acres will just about supply our present timber need.

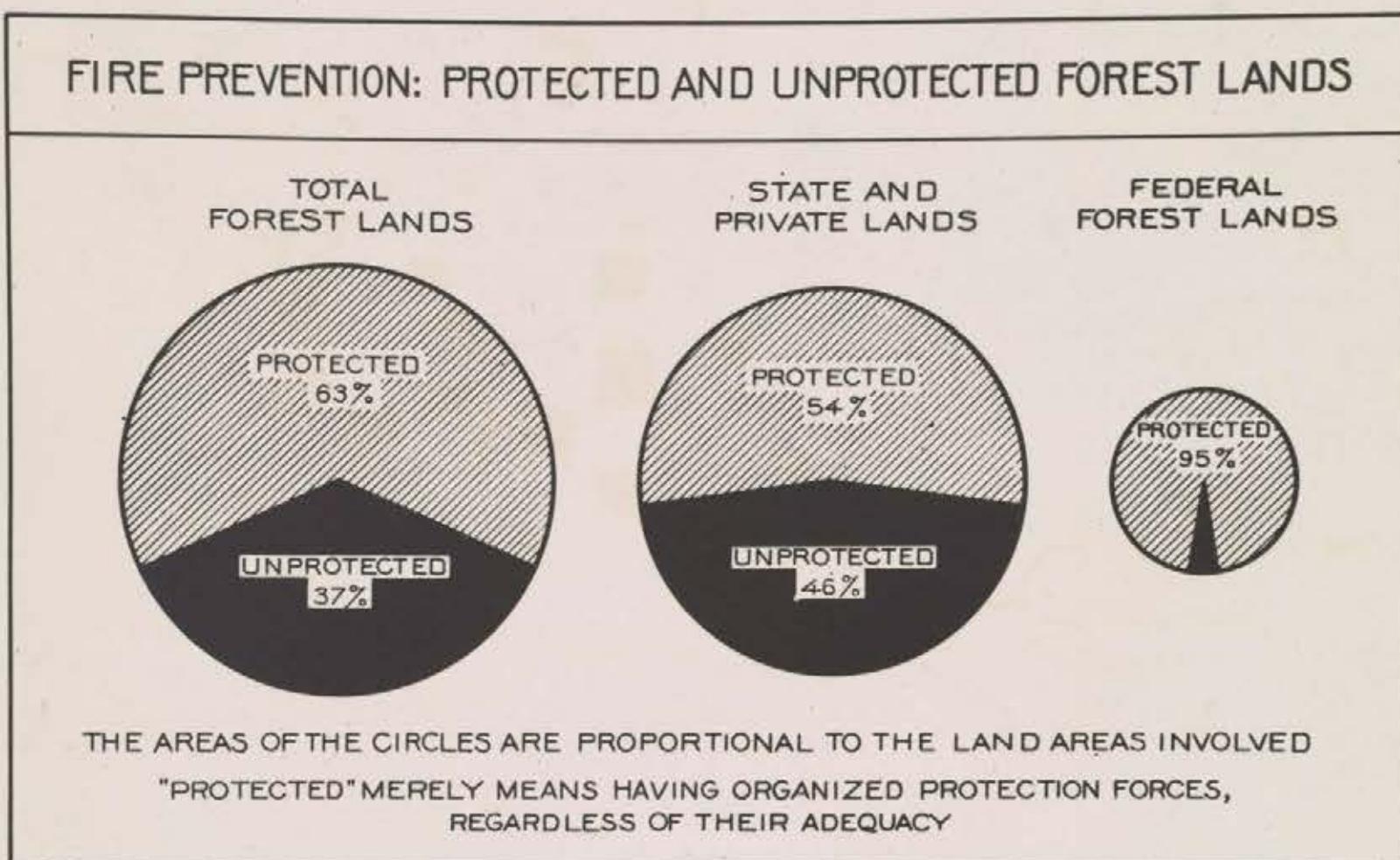
FORESTRY PRACTICE ON PRIVATE LANDS

CONTRASTED WITH PRIVATE FORESTS
SUBJECT TO DESTRUCTIVE EXPLOITATION

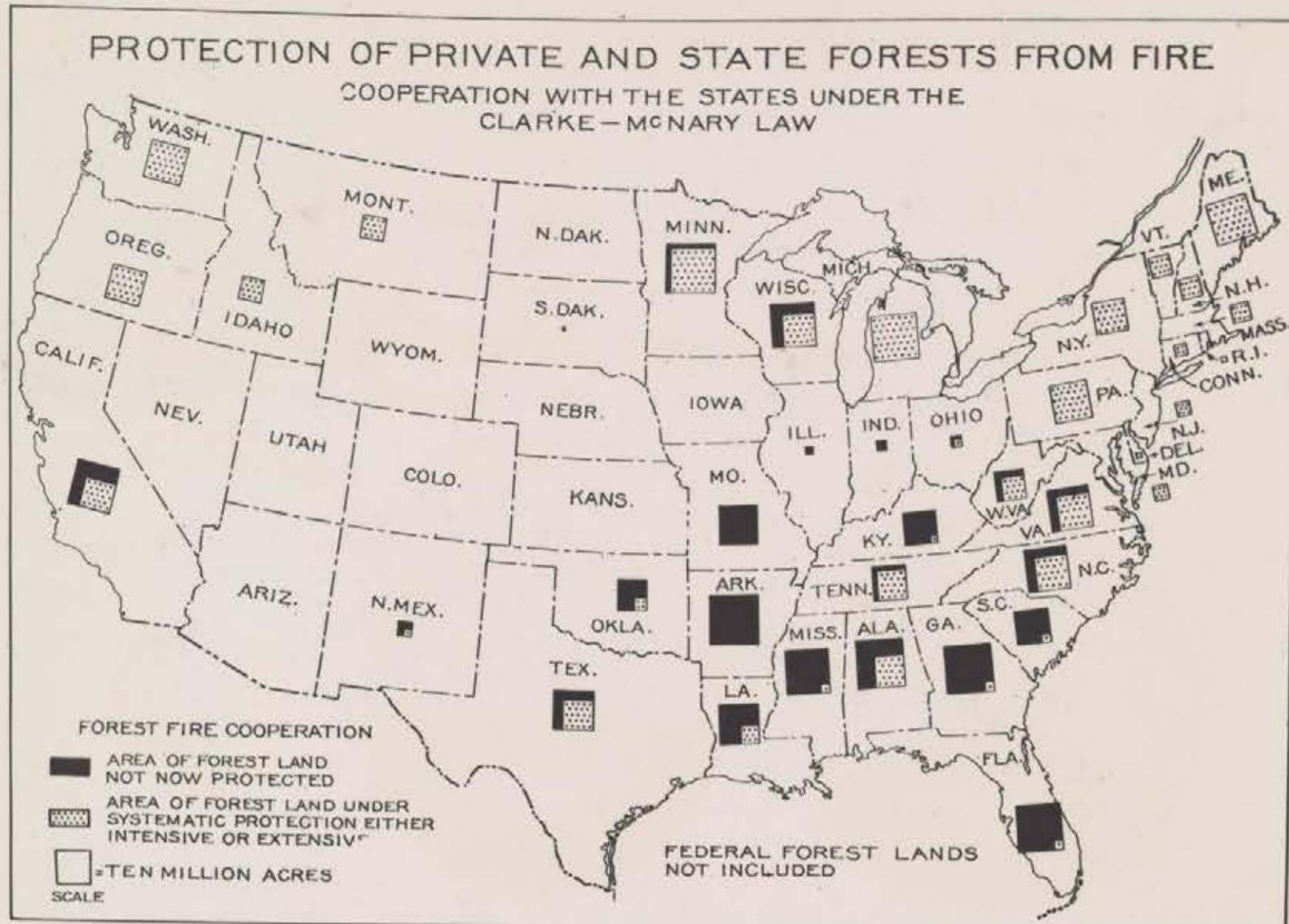


Destructive forest practices have been abolished in most public forests, but they still hold sway in the large bulk of our private forests, which constitute four-fifths of the forest area. The critical problem is to improve methods of handling private forests. There are three methods of approach: first, the strengthening of public assistance to forest owners in protection, planting, research, and tax reform; second, the extension of public cooperation to include joint working out of better forest practices; and, third, if and where necessary to protect the public interest, the adoption of restrictive measures against specific destructive practices.

PROGRESS IN FIRE PROTECTION

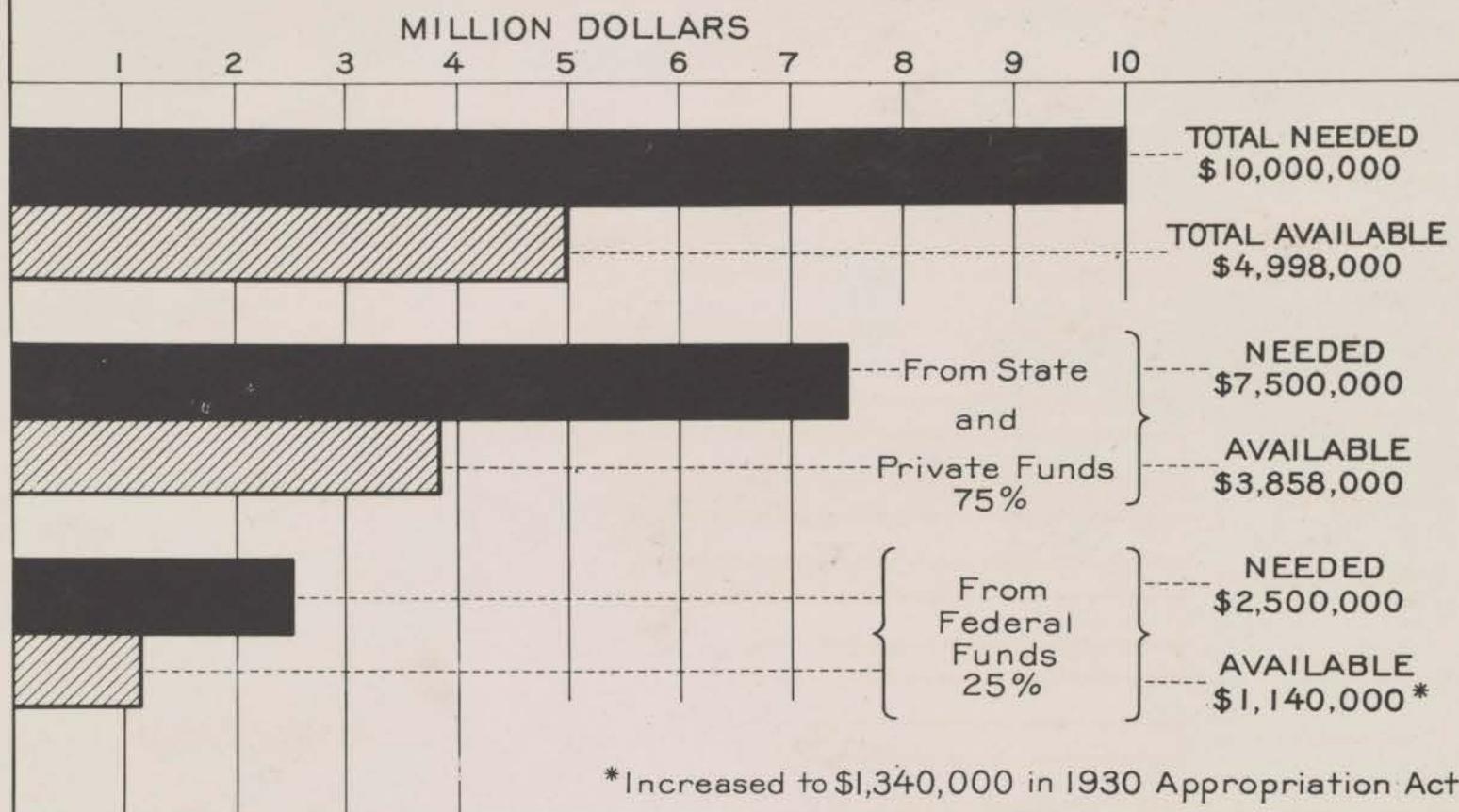


Forest fire protection is the first step toward forest culture. In spite of excellent progress, less than $\frac{2}{3}$ of the forest area has organized protection and much of that is inadequate. Rapid extension and intensification of protection is urgent. Delay will mean large additional areas of devastated land.



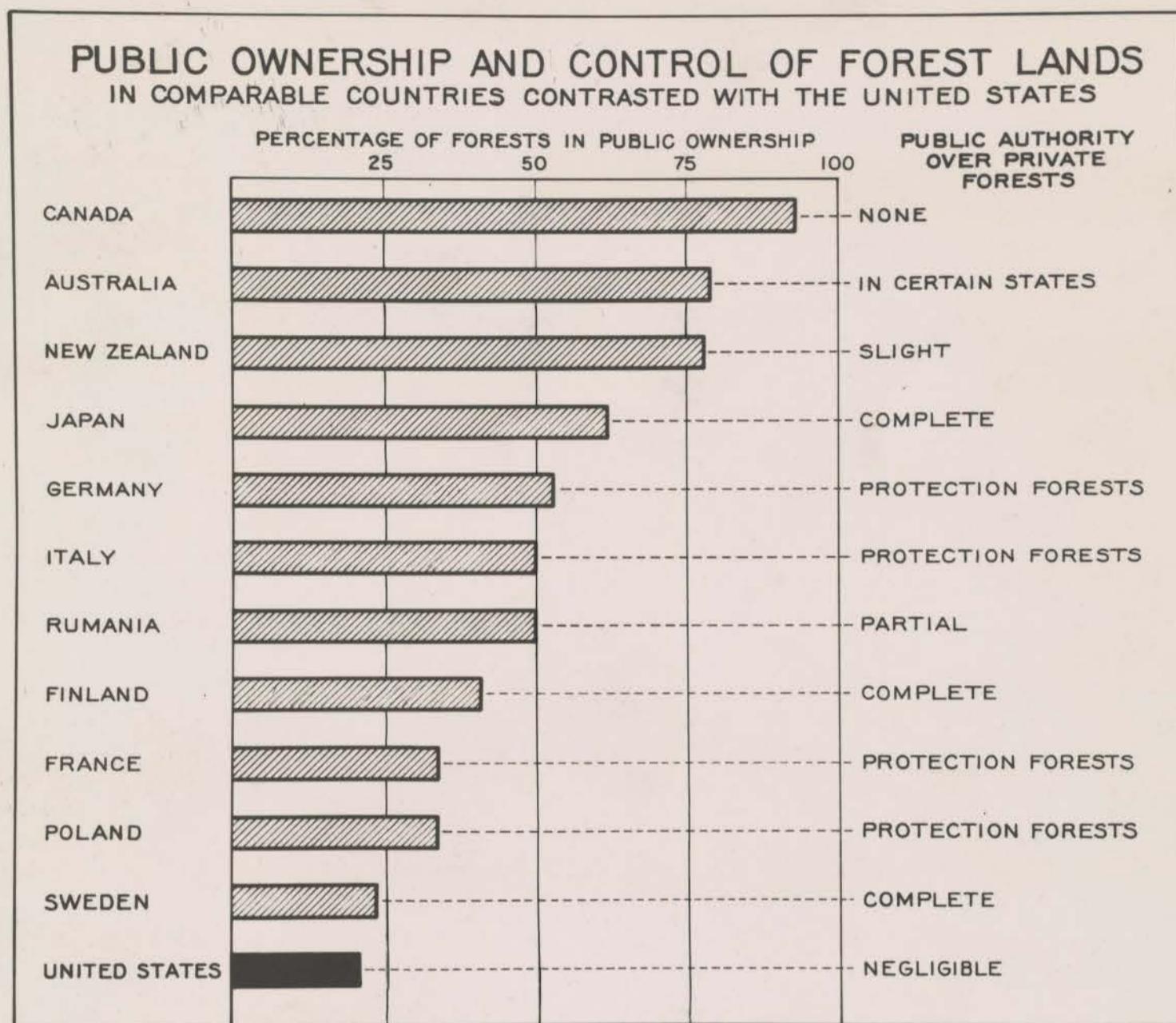
Under the Clarke-McNary Act the Federal Government is cooperating in forest fire protection with 38 States. The cost of protection will ultimately be prorated 25 per cent to the Federal Government, 25 per cent to the States, and 50 per cent to private owners. It is significant that 80 per cent of forest fires are confined to the still unprotected area.

**INADEQUACY OF FUNDS FOR FIRE PROTECTION
UNDER CLARKE-MCNARY COOPERATIVE FORESTRY LAW, 1929**



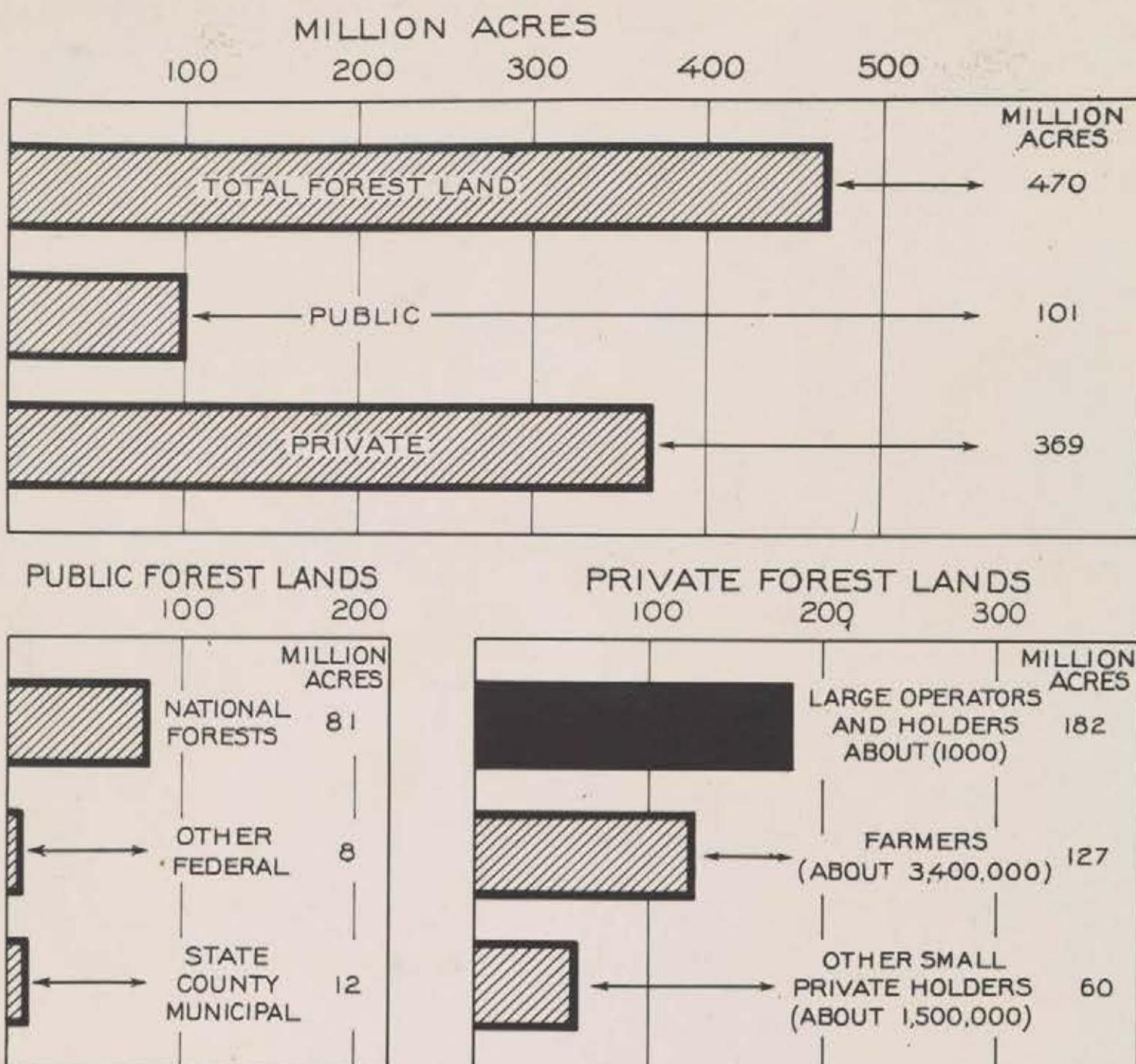
Cooperative protection of private and State lands, shared under the Clarke-McNary Act by the States, the Federal Government, and the private owners, is inadequately financed. Only about half the money is available that is needed for a reasonably effective protection system for these forests, which comprise $\frac{4}{5}$ the entire forest area.

PROGRESS IN PUBLIC OWNERSHIP



Public ownership is recognized in many countries as the chief means of restricting destructive forest exploitation, and is supplemented in many cases by public control of private exploitation. These public undertakings are a recognition of the incapacity of private ownership to cope with the forest problem without public leadership and assistance.

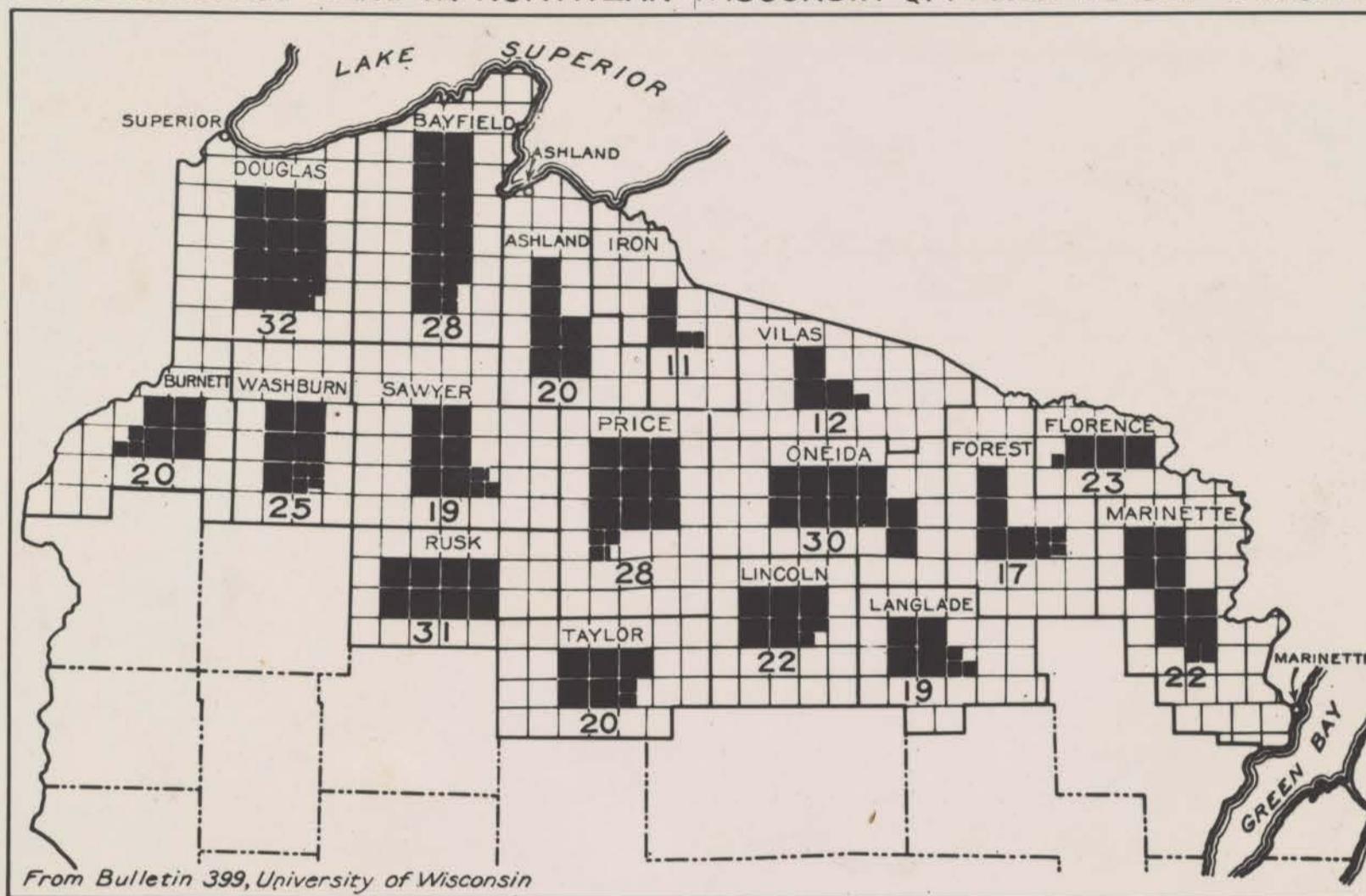
OWNERSHIP OF FOREST LANDS - 1920



Only a little more than one-fifth of the forest land in the United States is in public ownership. Of that, 9/10 is federally owned. State ownership lags far behind Federal. A significant feature of private ownership is the marked concentration of commercial forests in the hands of large owners and the large aggregate amount of farm forests, distributed among millions of owners. The problems created by these two main classes of ownership demand different methods of treatment.

LAND ABANDONMENT

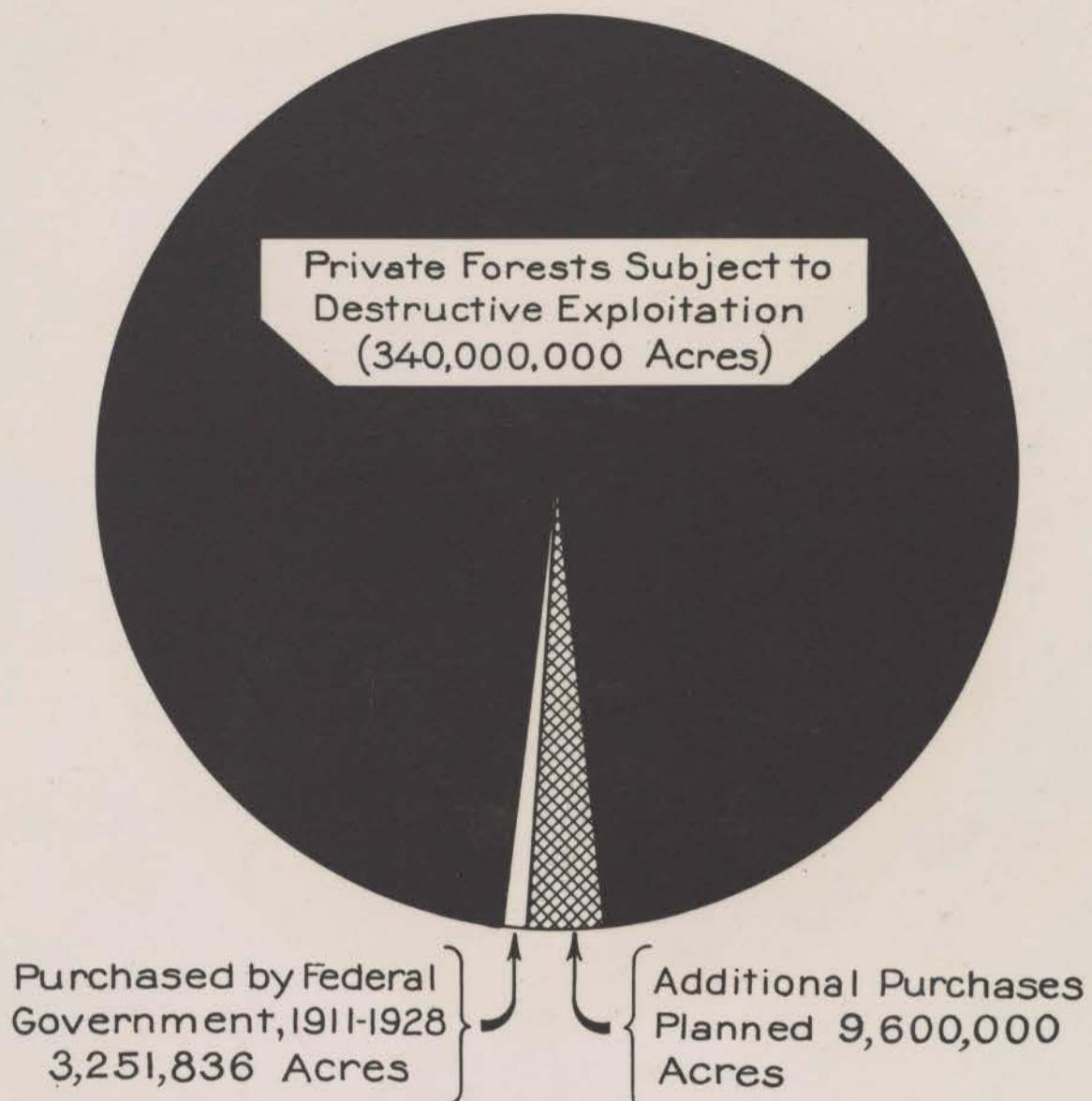
PERCENTAGE OF LAND IN NORTHERN WISCONSIN OFFERED IN 1927 TAX SALE



Land abandonment is increasing in many regions. Northern Wisconsin affords an example. In 1927 from 12 to 32 per cent of the total areas of the northern counties was tax delinquent and offered at public sale.

Much of the delinquent land (both cut-over and marginal farm land) is best suited for public forests, county, State and Federal, and unless definitely organized and managed as such is likely to suffer rapid and severe deterioration both of forest cover and of soil.

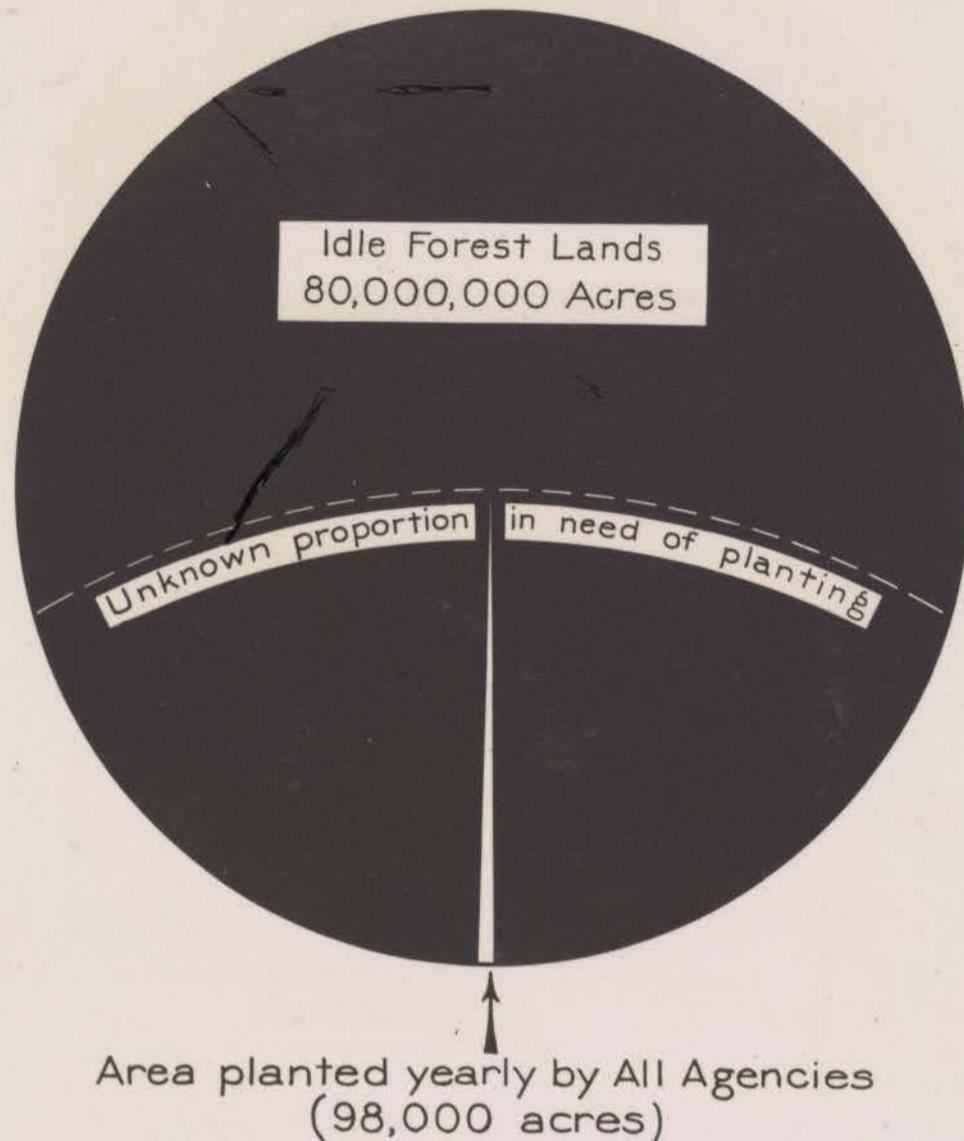
FEDERAL FOREST PURCHASE PROGRAM
CONTRASTED WITH
FORESTS SUBJECT TO DESTRUCTIVE EXPLOITATION



The present Federal forest purchase program is wholly inadequate as a measure of public security against destructive forest exploitation or as a means of withdrawing low-grade farm lands from profitless cultivation. An immediate and assured means to restrict destructive forest exploitation is through a large increase in Federal and State acquisition.

PROGRESS IN FOREST PLANTING

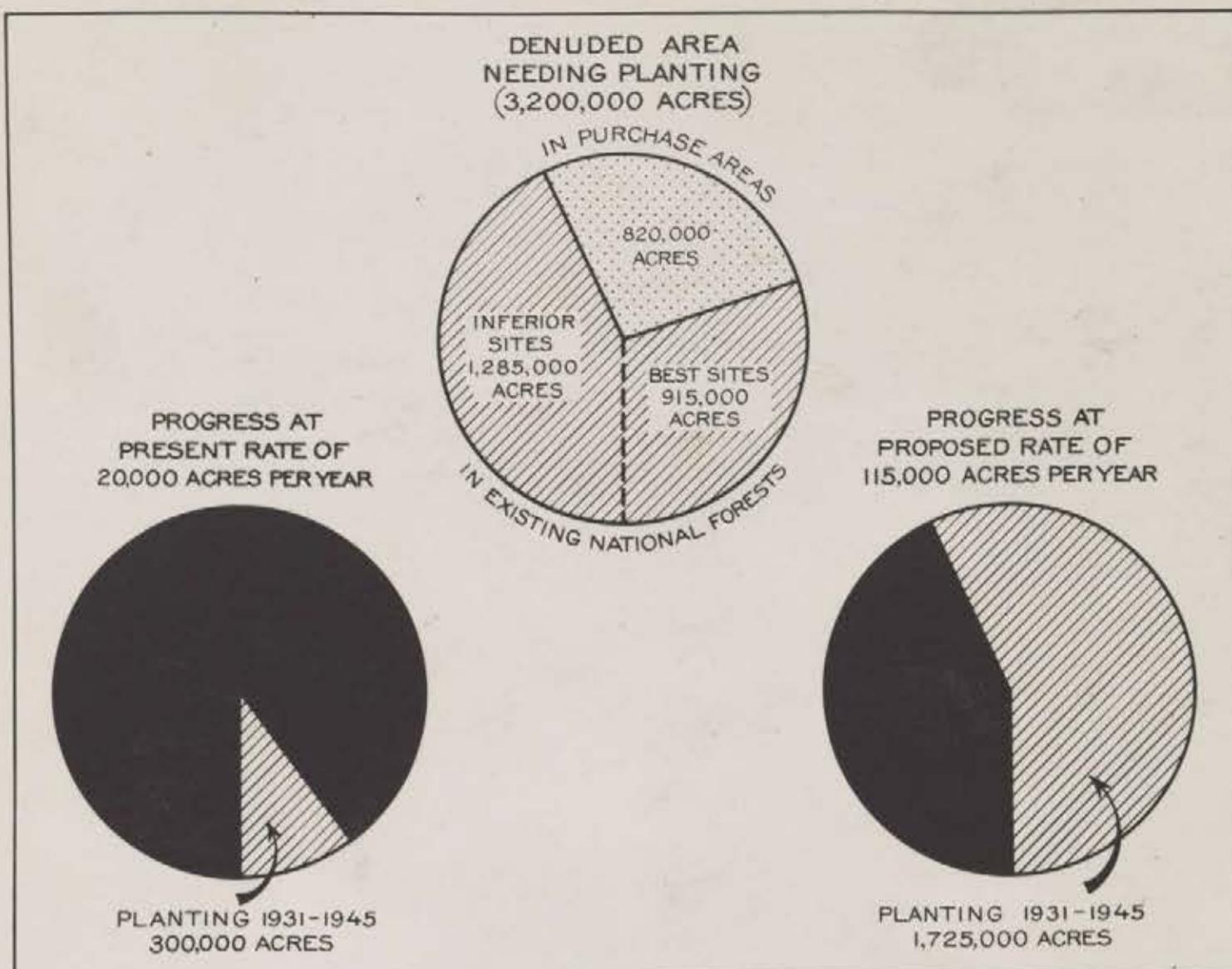
TOTAL ANNUAL FOREST PLANTING
IN THE UNITED STATES
CONTRASTED WITH IDLE FOREST AREA



Extensive forest planting will be an important part in restoring vast areas of denuded or deteriorated forest lands. In addition, large areas of marginal farm lands withdrawn from field crops should be planted to timber.

Only a part of all denuded forest lands are in stable enough ownership to permit planting, but the extent of planting is insignificant even in comparison with this opportunity. Denuded lands in National Forests, existing or to be purchased, should be promptly planted; the States should undertake more extensive planting; and Federal and State encouragement of private planting should be increased.

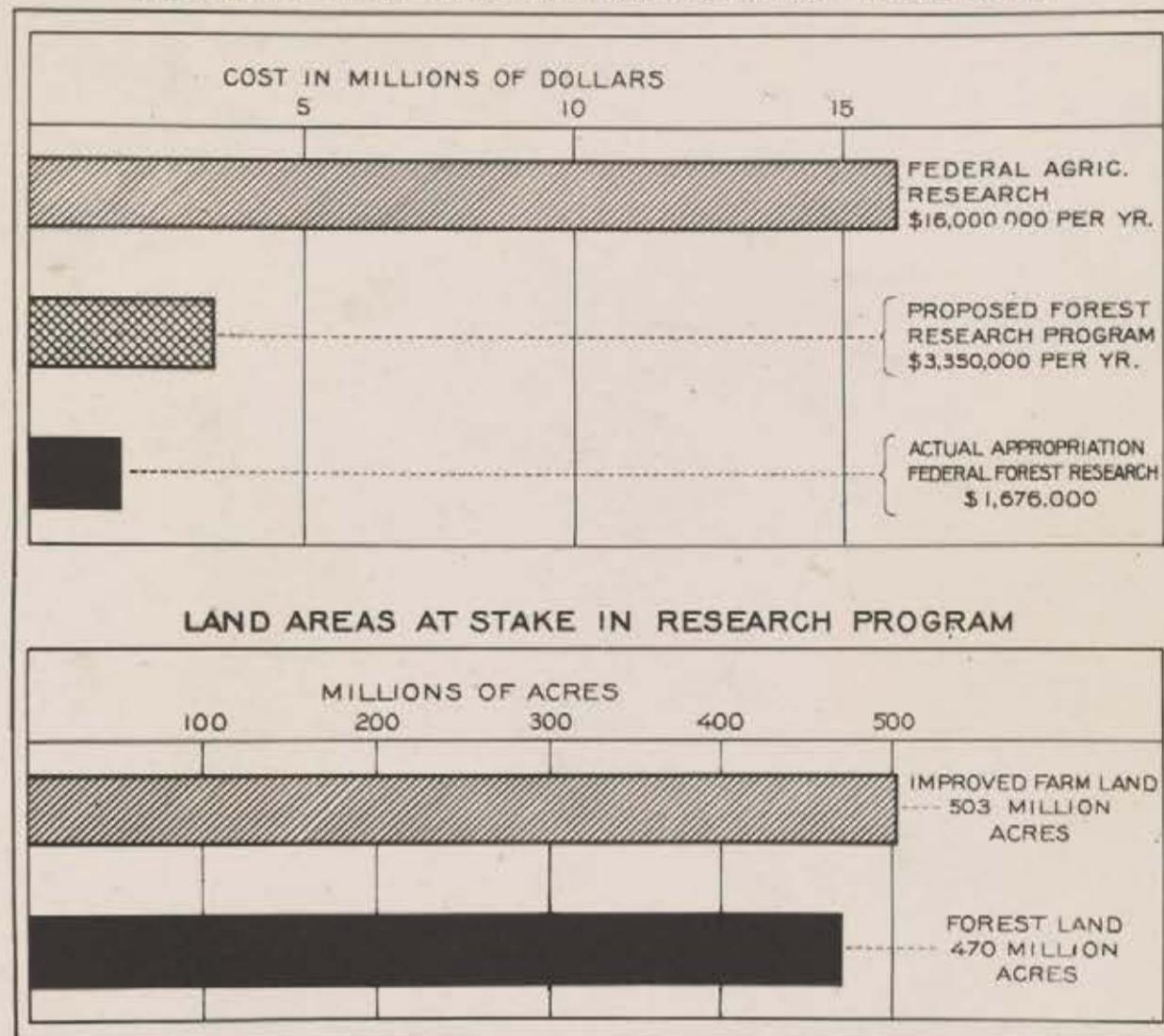
NATIONAL FOREST PLANTING PROGRAM



At the present rate it will take 110 years to plant the denuded lands in existing National Forests, omitting denuded lands included in new purchase areas, which also should be promptly planted. Idle National Forest lands contribute little toward their keep, and it is obviously good business as well as good public policy to make them productive. The proposed program would plant the better sites, now owned or to be acquired, in about 15 years.

PROGRESS IN FOREST RESEARCH

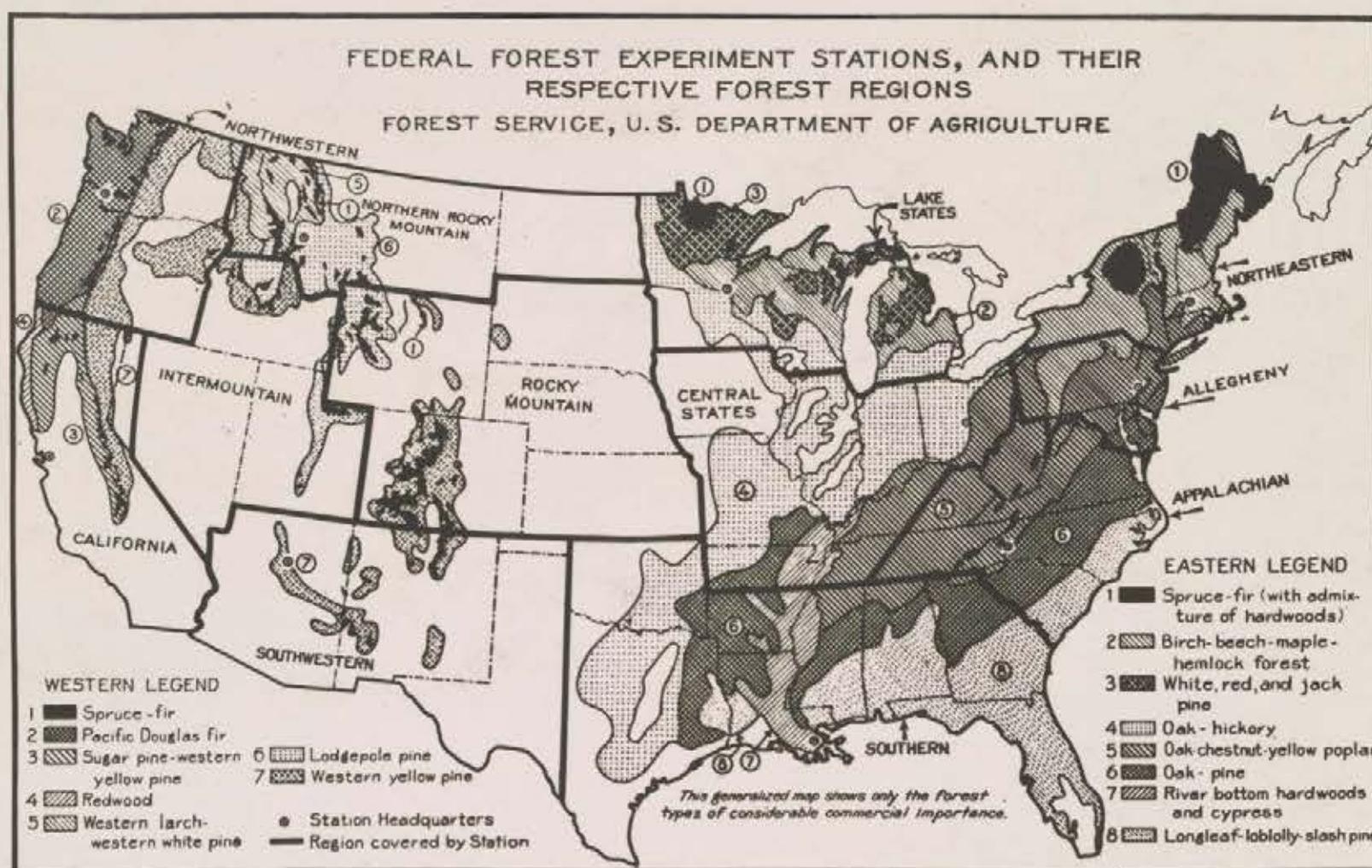
PROPOSED FOREST RESEARCH PROGRAM COMPARED WITH FEDERAL AGRICULTURAL RESEARCH



Federal leadership in forest research is essential as a means of speeding up the adoption of better forest practices. The proposed research program is authorized by the McSweeney-McNary Act, but is as yet inadequately financed.

The program covers methods of timber-growing, more intensive utilization, and forest economics, including a national survey of forest resources as a basis for national policy and private forestry undertakings.

REGIONAL RESEARCH



Each of the major distinctive forest regions has a Federal forest experiment station, whose function it is to determine methods of harvesting, managing, protecting and reproducing the various types of forest within its range so that they will be permanently productive. Each of these forest regions is distinguished by a similarity of forest types, of forest problems, and of forestry methods. Regional development of research and of other forestry undertakings and programs is therefore a logical method of approach.

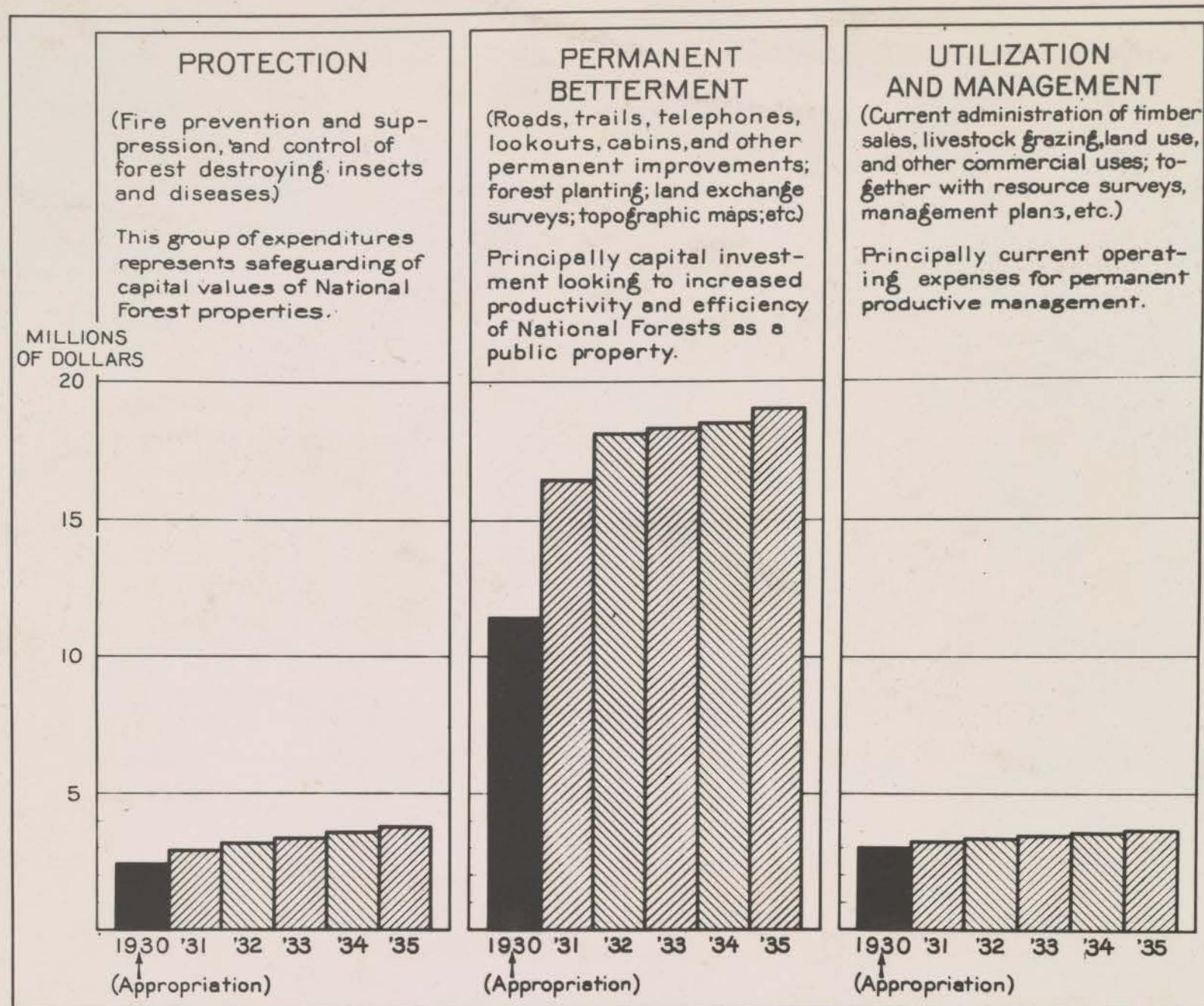
V. IMMEDIATE STEPS NEEDED

The immediate need is to strengthen existing Federal forestry undertakings. These undertakings (exclusive of the National Parks, Indian forest lands, and unappropriated forested public domain) are lodged in the Department of Agriculture and are as follows:

- (1) Management, development, and utilization of the National Forests.
- (2) Federal, State, and private cooperation in fire protection, planting, extension, etc.
- (3) Federal forest purchase program.
- (4) Forest research.

The following tentative five-year financial program for these activities is subject to revision after more intensive study of needs.

PROPOSED FIVE-YEAR FINANCIAL PROGRAM FOR NATIONAL FORESTS



Under protection, the main increases are for fire-guards and fire-fighting equipment, and for combatting epidemics of forest insects and diseases.

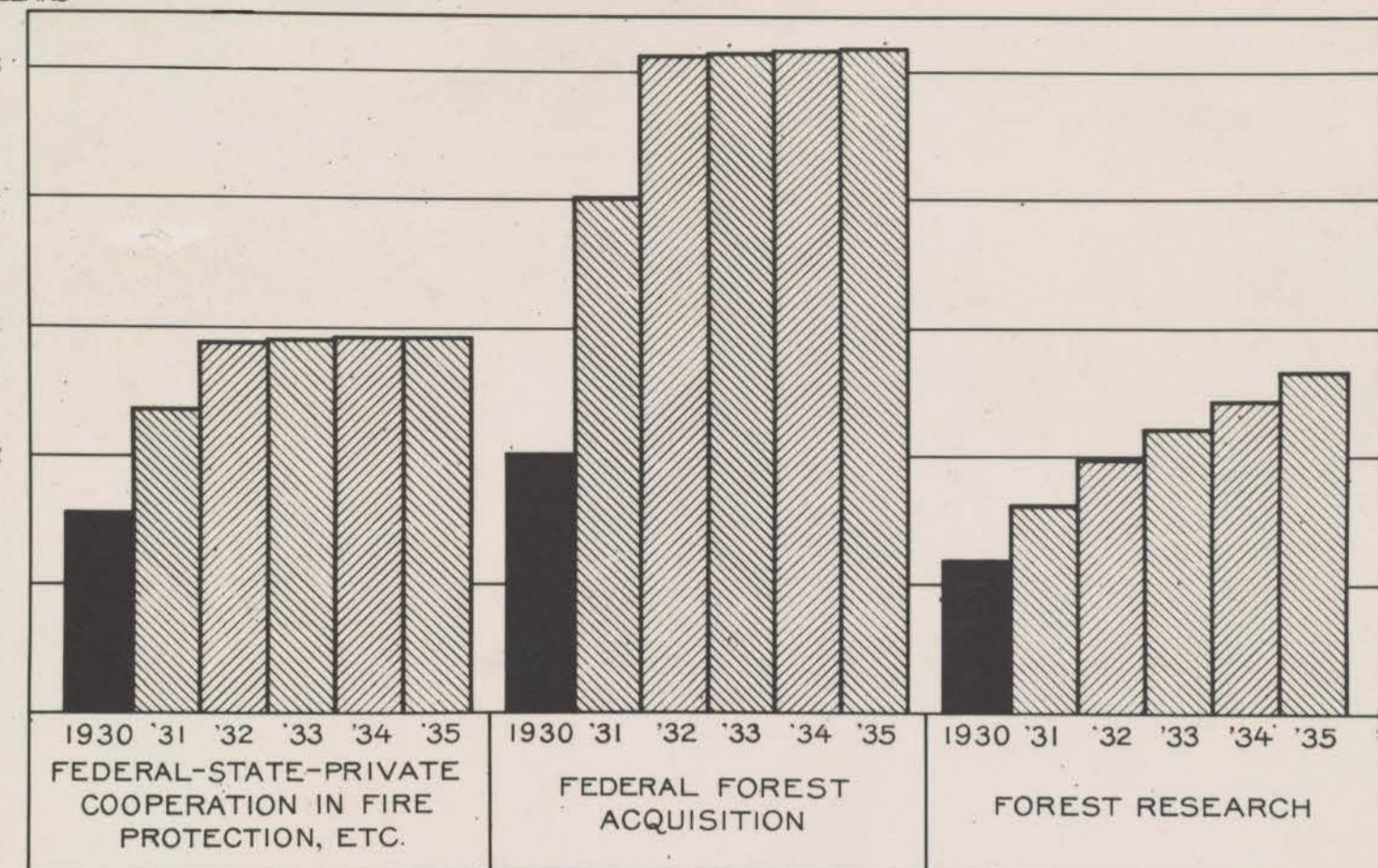
The great bulk of the proposed increases is for permanent capital investment, including fire protection, improvements, and planting. Of the present improvement appropriation, the major part is for roads. Other improvements (especially those directly contributing to protection) should be made on a comparable scale.

PROPOSED FIVE-YEAR FINANCIAL PROGRAM FOR FORESTRY ACTIVITIES

OF THE DEPARTMENT OF AGRICULTURE

EXCLUSIVE OF THE NATIONAL FORESTS (SEE FIG.)

MILLIONS
OF DOLLARS



(1) The proposed increases in Federal, State, and private cooperation are to meet the amounts authorized by Congress in the Clarke-McNary Act, pending a more thorough determination of the Nation's forest protection needs.

(2) The proposed increases for forest purchases are to meet a reasonable proportion of the 9,600,000 acre program approved by the National Forest Reservation Commission.

(3) The proposed increases for forest research are to meet the authorization under the McSweeney-McNary Act.

These increases are for the purpose of redeeming Federal responsibilities and commitments, and will put the Federal Government in a much more favorable position to expect more adequate State and private cooperation.

VI. FORMULATION OF A LARGER NATIONAL PROGRAM

The preceding program is merely an emergency measure. There is need for the creation of a more far-reaching national program of forestry. Steps should be taken to reformulate public and private responsibilities for establishing better forest practices, to create more adequate means for the assumption of these responsibilities, and to overcome public apathy toward the real needs of the forest situation.

Such a program should give special attention to the following:

- (1) Aggressive cooperation with forest owners and industries to abolish destructive forest exploitation and to create cooperative agencies to this end; and to stimulate larger industrial participation in an enlarged program of forest research;
- (2) Public assistance in strengthening and stabilizing the forest industries in order that they can undertake orderly production and continuous

timber-growing as an industrial enterprise; and increased advice and assistance to farmers and other small forest owners:

- (3) Investigation of the importance and feasibility of public measures to prevent destructive forest exploitation, including a study of public measures to this end in other countries;
- (4) Larger public and private participation in forest fire protection in order to make it universal and effective;
- (5) Large extension of Federal and State ownership, an immediate and assured means of restricting the field of destructive exploitation by bringing a larger proportion of the forest area under productive management as a measure of public security.
- (6) Making public forests fully productive, especially through complete protection, more intensive management, and an adequate program of planting.

